

surface of the first die and a contact pad on a lower surface of the second die.

23. The device of claim 22 wherein the interconnection between a bump on an upper surface of the first die and a contact pad on a lower surface of the second die comprises a solder connection.

24. The device of claim 22 wherein the circuitry implements operational delivery of electrical stimulation therapy.

25. The device of claim 22 wherein the circuitry implements implantable pacemaker pacing and sensing functions.

REMARKS

The now-canceled original claims were rejected as being anticipated or obvious from Gnadinger (U.S. Patent No. 5,229,647) and/or Akram (U.S. Patent No. 5,808,360). The claims were drawn to a stacked arrangement of wafers in an implantable medical device. The examiner contended that somehow, though unexplained, it would be inherent in Gnadinger that a stacked arrangement would be used in an implantable medical device.

Applicant is submitting new claims 22-25, which are specifically drawn to an implantable medical device wherein a semiconductor module is mounted inside the housing and includes first and second semiconductor die in a stacked arrangement, wherein the stacked semiconductor die having circuitry implement an operational implantable medical device function, and wherein a plurality of the electrical connections extend between the die with each electrical connection comprising an interconnection between a bump on an upper surface of the first die and a contact pad on a lower surface of the second die. The new claims more specifically focus on the novel and inventive aspects set forth in the present application.


Nowhere do either Gnadinger or Akram mention the packaging of stacked semiconductor die in an implantable medical device in the manner set forth in the

claims. Nor does either suggest the packaging of stacked semiconductor die in an implantable medical device in the manner set forth in the claims.

Applicant requests that a notice of allowance be issued in due course.

Respectfully submitted,

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Cancel claims 1-21 and enter new claims 22- 25 as follows:

22. (New) An implantable medical device, comprising:
 - a housing;
 - a semiconductor module mounted inside the housing and including first and second semiconductor die in a stacked arrangement, the stacked semiconductor die having circuitry implementing an operational implantable medical device function; and
 - a plurality of the electrical connections extending between the die, each electrical connection comprising an interconnection between a bump on an upper surface of the first die and a contact pad on a lower surface of the second die.
23. (New) The device of claim 22 wherein the interconnection between a bump on an upper surface of the first die and a contact pad on a lower surface of the second die comprises a solder connection.
24. (New) The device of claim 22 wherein the circuitry implements operational delivery of electrical stimulation therapy.
25. (New) The device of claim 22 wherein the circuitry implements implantable pacemaker pacing and sensing functions.